



Total capability in rotating machines



## Rotating Machines

- Design & machines engineering ■
- Repair & refurbishment ■
- Installation & commissioning ■
- Site service ■
- Major overhauls ■
- Long-term service agreements (LTSA's) ■
- Diagnostics & life assessment testing ■
- New equipment & spares supply ■

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## High dependency equipment needs a highly dependable supplier

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As a rule, rotating electrical equipment performs highly critical functions. Driving production lines, oil rigs, steel mills. Making electricity. Powering plant, towns, cities, countries. Providing your revenue, maintaining your operating capacity – and your reputation.

But rotating machines with many moving parts – often in hostile environments – don't look after themselves. They suffer electrical and mechanical stress, wear out, overheat, corrode and can catastrophically fail. That's why it's vital to have a structured maintenance and repair strategy in place to avoid costly downtime and reduce total cost of ownership. Quartzelec should be the key component of that strategy.

One of the largest independent electrical engineering service providers in the UK and a globally recognised expert in rotating capital plant, Quartzelec delivers support solutions for a wide range of UK and worldwide customers.



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*"Quartzelec's heritage has ensured we are a globally recognized expert in the field of rotating electrical machines".*

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**Daniel Laval - Managing Director**



## Why Quartzelec?



Quartzelec is a highly dynamic organisation – available 24/7 and dedicated to supporting customers through a network of regional offices and workshop facilities, giving us the capability to provide worldwide support at a local level.

Our specialist expertise is drawn from a distinguished heritage, stretching over 100 years and which includes some of the most highly respected names in electrical engineering; GEC, Alstom, AEI, BTH, Metropolitan-Vickers, English Electric, Edison-Swann, Ferguson Pailin and Lancashire Dynamo Crypto.

With a comprehensive range of services, Quartzelec provides support for machines from fractional horsepower up to 600MW. So whether you need regular, scheduled maintenance for drive motors on your production line – or you have a disastrous power generator failure, you'll reap the benefits of our fully integrated services: optimised plant reliability, minimal downtime.



*We're modern*, with state of the art facilities and equipment. Using the latest technology for on-site machining, balancing and testing. For large plant, thermal modelling and finite element analysis of dynamic mechanical stresses provide complete insight into all aspects of performance.

*We're fully equipped*, whether servicing in situ, or repairing in one of our strategically located workshops which have the equipment, manpower and expertise to handle machines of any size.



*We're flexible*, having the ability to repair, reverse-engineer or where required, re-manufacture machines originally produced by our forebears or other OEM's, with a comprehensive spares capability. We have access to over 100 years of design files, original engineering drawings, tooling records and other archives associated to electrical rotating plant manufacture, giving us a significant advantage when it comes to supporting these brands. Due to our unrivalled level of service and reputation, Quartzelec are authorised service and major spares providers for many bluechip organisations within industry, across the UK and overseas.

We believe in the importance of customers fully understanding their equipment, and can deliver structured operator training designed to avoid breakdown situations.

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*"Quartzelec is renowned for exceptional service, agility and initiative".*

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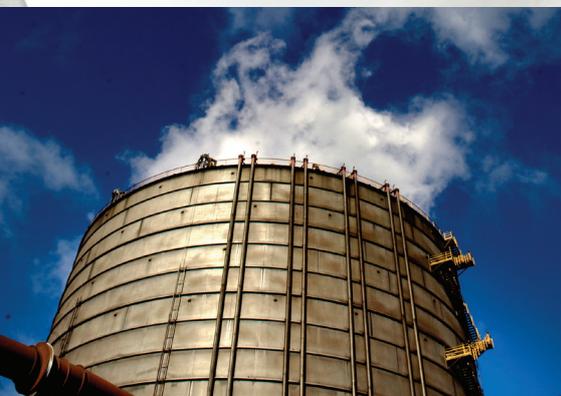
**Daniel Laval - Managing Director**

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### **A quality solution**

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Our quality assurance systems underpin all our activities, wherever carried out. They are accredited to Lloyds ISO9001. This also applies to our sub-contractors, ensuring full compliance and guaranteeing the highest level of performance for all work carried out.



### **Protecting our environment**

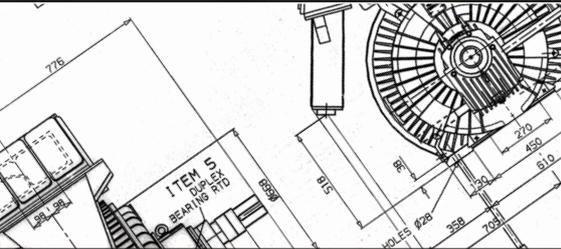
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Recognising our responsibility for environmental protection, we not only comply with or exceed all relevant legislation, but also work proactively to ensure our installations have pollution prevention, energy and raw materials reduction and optimised control of waste materials designed-in. Similarly, our workforce both in the field and at our offices and facilities work in conformance to our high environmental standards with the continued wellbeing of our planet at heart.

Quartzelec are accredited to Lloyds ISO14001.

## Our services - defined

### Design & machine engineering



- Design / redesign of all electrical machines, cores, windings, retaining rings, supports, blocking and insulation
- Protection system design
- Feasibility studies
- Excitation and Automatic Voltage Regulation (AVR) system design and supply
- Providing solutions to inherent design issues for rotating machines

### Repair & refurbishment



- Repair, rewind and retrofit of rotating electrical equipment, from 415V up to 22kV
- Repair of static and rotating mechanical plant
- Workshop engineering and on-site diagnosis
- Winding and re-insulation of electric motors
- Cryogenic decontamination
- In-situ installation of replacement components and ancillary equipment
- On-site machining, including commutator skims

### Installation & commissioning



- New machines
- Repaired/refurbished machines
- Protection systems
- Ancillary control and instrumentation equipment, excitation systems
- On-site equipment commissioning

### Site service



- Electrical maintenance (with or without unit shutdown)
- Non-destructive testing (electrical and mechanical)
- Site safety
- Fire detection system maintenance
- Condition-based maintenance
- Value system maintenance and automation
- Operator and maintenance training

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*“Quartzelec is a highly dynamic organisation – available 24/7 and dedicated to supporting customers with specialist expertise”.*

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**Daniel Laval - Managing Director**

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## Major overhauls



- Site or workshop based
- Winding and insulation
- Shafts, bearings, oil and hydrogen seals, couplings and retaining rings
- Rotor and stator components

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## Long-term service agreements (LTSA's)



- Lifetime care and maintenance packages, from basic annual inspection to total risk management
- Performance-based contracts
- 24/7 support service
- Immediate breakdown response

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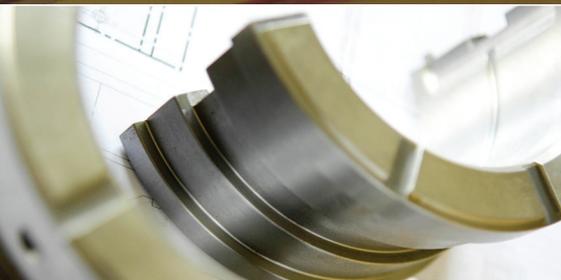
## Diagnostics & life assessment testing



- Troubleshooting
- Recalibration
- In-situ balancing and laser realignment
- Remnant life assessments
- Condition monitoring (online and offline)

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## New equipment & spares supply



- Design, manufacture and reverse-engineering to OEM specifications
- Sourcing of replacement machines and associated parts
- Authorised stockist of leading LV/HV motor manufacturers
- Supply and management of capital spares and machine components
- Spares manufacture to OEM design and standard
- Stockholding and management for maintenance contracts
- Manufacture of certified terminal boxes

## Excellence in Electrical Engineering

- High Voltage Services ■
- Rotating Machines ■
- Electrical Services ■

Quartzelec is a leading electrical engineering group delivering design, manufacturing, installation and maintenance solutions to customers over a broad range of sectors.

As a Quartzelec customer you'll benefit from a smart, proactive approach, quality which befits the lifecycle of the project and service which meets or exceeds your – and your customers' – expectations.

Underpinned by a pedigree of expertise, experience and innovation earned by us and from the companies from which we have grown – all highly respected names in electrical engineering: GEC, Alstom, ScottishPower, Norweb Contracting and Cegelec to name but a few.

From the integrity of an electrical installation in a hospital to the reliability of a motor rotating for years at 3,000rpm, you can rely on Quartzelec to continue delivering robust, cost-effective services.

To discuss your next project, or find out more about our rotating machines portfolio, please contact:

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